



11) Publication number:

0 455 201 A3

## EUROPEAN PATENT APPLICATION

(21) Application number: **91106936.7** 

(51) Int. Cl.5: G05B 9/02

② Date of filing: 29.04.91

(12)

Priority: 02.05.90 JP 116150/90

Date of publication of application:06.11.91 Bulletin 91/45

Designated Contracting States:
 CH DE ES FR GB IT LI

Date of deferred publication of the search report: 18.03.92 Bulletin 92/12

Applicant: IDEMITSU KOSAN COMPANY LIMITED

1-1, Marunouchi 3-chome Chiyoda-ku Tokyo(JP)

Applicant: MITSUBISHI JUKOGYO KABUSHIKI KAISHA

KAISHA

5-1, Marunouchi 2-chome Chiyoda-ku Tokyo(JP)

Inventor: Kaseda, Shigeru, c/o Idemitsu

Kosan Co., Ltd Minamihama-cho 11 Chita-shi, Aichi-ken(JP)

Inventor: Takahashi, Koichi, c/o Idemitsu

Kosan Co., Ltd Minamihama-cho 11 Chita-shi, Aichi-ken(JP)

Inventor: Niinomi, Toshihiko, c/o Hiroshima

Tech. Inst.

Mitsub. Jukogyo K.K., 6-22 Kanonshin-machi

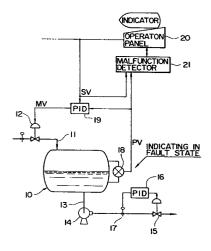
Nishi-ku Hiroshima-shi, Hiroshima-ken(JP) Inventor: Funakoshi, Ryohei, c/o Mitsubishi Jukogyo K.K.

5-1, Marunouchi 2-chome Chiyoda-ku, Tokyo(JP)

Representative: Patentanwälte Grünecker, Kinkeldey, Stockmair & Partner Maximilianstrasse 58 W-8000 München 22(DE)

- Apparatus for and method of detecting a malfunction of a controller.
- An deviation E between a setting value SV and an actual phase value PV in a controller is integrated, and the resulting integrated value S is compared with a predetermined threshold D for detecting a malfunction. Checking a change in setting value SV, checking an increase or a decrease in deviation E and comparison with the absolute value  $|E \times S|$  are made to ensure stability against fluctuations and rapid detection of a malfunction.

F 1 G. 1





## EUROPEAN SEARCH REPORT

EP 91 10 6936

DOCUMENTS CONSIDERED TO BE RELEVANT				
Category		th indication, where appropriate, vant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. CI.5)
Х	EP-A-0 184 020 (NIPPONI * claims 1-3; figures 4,5 * *	DENSO CO.)	1,6	G 05 B 9/02
Y	PATENT ABSTRACTS OF JAPAN vol. 14, no. 33 (M-923)22 January 1990 & JP-A-1 269 729 ( HINO MOTORS LTD ) 27 October 1989 * abstract * *			
Y	PATENT ABSTRACTS OF (P-140)(1049) 4 September & JP-A-57 089 108 ( HITAC 1982 * abstract * *		1,4,6,12	
				TECHNICAL FIELDS SEARCHED (Int. CI.5)
	The present search report has t	peen drawn up for all claims		
	Place of search  The Hague  Date of completion of search  14 January 92		<u>.</u>	Examiner
				GOETZ P.A.
Y : A : O : P :	CATEGORY OF CITED DOCL particularly relevant if taken alone particularly relevant if combined wit document of the same catagory technological background non-written disclosure intermediate document theory or principle underlying the in	th h another D: d L: d  &: m d	ne filing date ocument cited in t ocument cited for	other reasons